

SD-Wi-Fi-UART-BT-88W8987

Firmware Release Notes for FreeRTOS



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Revision History

Table 1: Document revision history

Revision	Date	Change details
Rev. 1	26-Mar-2021	Initial release
Rev. 2	05-July-2021	<ul style="list-style-type: none">• Section 1 and Section 2 updated• Section 5 and Section 7 updated
Rev. 3	27-Aug-2021	<ul style="list-style-type: none">• Section 1, Section 2 and Section 5 updated
Rev. 4	05-Jan-2022	<ul style="list-style-type: none">• Section 1 and Section 2 updated• Section 7 updated

1 Package Information

- SDK version: 2.11.0
- Wi-Fi and Bluetooth/Bluetooth LE Firmware version: 16.91.10.p235.2

Please refer to the Software feature list in the document *SD-Wi-Fi-UART-BT-88W8987-Wi-Fi-and-Bluetooth-Software-Features-for-FreeRTOS*.

2 Firmware Version Information

- Wireless SoC : 88W8987
- Wi-Fi and Bluetooth/Bluetooth LE Firmware version : 16.91.10.p235.2
 - 16 - Major revision
 - 91 - Feature pack
 - 10 - Release version
 - p235.2 - Patch number

3 Host Platform

- All i.MX RT Platform running FreeRTOS
- Interface used
 - Wi-Fi over SDIO (SDIO 2.0 support, SDIO clock frequency: 50 MHz)
 - Bluetooth/Bluetooth LE over UART

Test Tools

- iperf (version 2.0.5)

4 Wi-Fi Certifications

The Wi-Fi certification is obtained with the following combinations.

4.1 WFA Certifications

- STA | 802.11n
- STA | PMF

Refer *TN00066-WFA Derivative Certification Process* document available in SDK Package.

5 Wi-Fi Throughput

5.1 Throughput Test Setup

- Environment: Shield Room - Over the Air
- External Access Point: Netgear RAX 120
- DUT: W8987 Azurewave (Module : **AW-CM358-uSD**) with RT1060 platform
- External Client: Apple MacBook Air
- Channel: 6 | 36

Refer to **Section-3.1.1** in *UM11442-NXP Wi-Fi and Bluetooth Demo Applications User Guide for i.MX RT Platforms* to read more about the throughput test setup and topology.

5.2 STA Throughput

External AP: Netgear RAX 120

STA Mode Throughput - BGN Mode 2.4 GHz Band 20 MHz				
Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	Tx	Rx	Tx	Rx
Open Security	31	30	46	71
WPA2-AES	31	26	40	74
WPA3-SAE	31	39	46	67

STA Mode Throughput - AN Mode 5 GHz Band 20 MHz				
Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	Tx	Rx	Tx	Rx
Open Security	32	34	62	52
WPA2-AES	32	33	62	52
WPA3-SAE	30	32	62	51

STA Mode Throughput - AN Mode 5 GHz Band 40 MHz				
Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	Tx	Rx	Tx	Rx
Open Security	33	37	75	96
WPA2-AES	33	38	73	96
WPA3-SAE	33	35	71	94

STA Mode Throughput - AC Mode 5 GHz Band 20 MHz (VHT)				
Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	Tx	Rx	Tx	Rx
Open Security	32	37	47	74
WPA2-AES	31	37	48	75
WPA3-SAE	32	40	48	60

STA Mode Throughput - AC Mode 5 GHz Band 40 MHz (VHT)				
Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	Tx	Rx	Tx	Rx
Open Security	34	40	83	92
WPA2-AES	34	39	81	91
WPA3-SAE	34	43	83	100

STA Mode Throughput - AC Mode 5 GHz Band 80 MHz (VHT)				
Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	Tx	Rx	Tx	Rx
Open Security	35	42	85	93
WPA2-AES	35	41	81	94
WPA3-SAE	37	35	83	103

5.3 Mobile AP Throughput

External client: Apple Macbook Air

Mobile AP Mode Throughput - BGN Mode 2.4 GHz Band 20MHz				
Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	Tx	Rx	Tx	Rx
Open Security	29	34	41	60
WPA2-AES	29	32	42	58
WPA3-SAE	26	32	43	61

Mobile AP Mode Throughput - AN Mode 5 GHz Band 20 MHz				
Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	Tx	Rx	Tx	Rx
Open Security	30	35	42	55
WPA2-AES	28	31	44	59
WPA3-SAE	27	30	42	61

Mobile AP Mode Throughput - AN Mode 5 GHz Band 40 MHz				
Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	Tx	Rx	Tx	Rx
Open Security	30	42	75	102
WPA2-AES	32	50	76	104
WPA3-SAE	32	50	76	106

6 EU Conformance tests

- EU Adaptivity test - EN 300 328 v2.1.1 (for 2.4 GHz)
- EU Adaptivity test - EN 301 893 v2.1.1 (for 5 GHz)

7 Bug Fixes/Feature Enhancements

Component	Description
Wi-Fi	<ul style="list-style-type: none">• "RF Test Mode configuration failed" Not able to start RF Test mode by using "wlan-set-rf-test-mode" command.• Added support for WPA3 R3 security

8 Known Issues

Component	Description
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9 Notes

- None

10 Legal Information

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